

What is Claimed is:

1. A polymer composite which comprises:
 - (a) a cellulose-based polymer filler;
 - (b) a chlorinated resin coupling aid said resin chlorinated to between approximately 30-75%; and
 - (c) a thermoplastic polymer.
2. The composite of claim 1 which further comprises a lubricant.
3. The process of claim 2 wherein said lubricant is selected from the group consisting of metal soaps, hydrocarbon waxes, fatty acids, long-chain alcohols, fatty acid esters, fatty acid amides, silicones, fluorochemicals, acrylics, and mixtures thereof.
4. The process of claim 3 wherein said lubricant is a polyalkylene glycol fatty acid ester.
5. The composite of claim 2 wherein said resin is chlorinated to between approximately 40-75%.
6. The composite of claim 3 wherein said resin is chlorinated to between approximately 50-75%.
7. The composite of claim 4 wherein said resin is chlorinated to between approximately 60-75%.
8. The composite of claim 5 wherein said resin is chlorinated to between approximately 68-72%.
9. The composite of claim 5 wherein said resin is about 4% by weight of said composite.
10. The composite of claim 7 which further comprises a processing aid.
11. The composite of claim 8 wherein said processing aid is talc.
12. The composite of claim 9 wherein
 - (a) said processing aid is approximately 4 weight percent; and
 - (b) said filler is approximately 60 weight percent.
13. A process for improving extruder output of a cellulose and thermoplastic composite comprising the step of:
 - (a) adding between approximately 0.1% to 10% by weight of a chlorinated resin, said resin chlorinated to between approximately 30-75%.
14. The process of claim 11 wherein said resin is chlorinated to between approximately 60-75%.

15. The process of claim 12 wherein said resin is chlorinated to between approximately 68-72%.
16. The process of claim 12 which further comprises the step of adding a lubricant.
17. The process of claim 16 wherein said lubricant is selected from the group consisting of metal soaps, hydrocarbon waxes, fatty acids, long-chain alcohols, fatty acid esters, fatty acid amides, silicones, fluorochemicals, acrylics, and mixtures thereof.
18. The process of claim 17 wherein said lubricant is a polyalkylene glycol fatty acid ester.
19. The process of claim 16 which further comprises the step of adding a processing aid.
20. A process for improving a cellulose and thermoplastic composite by reducing extruder torque during processing while essentially maintaining flexural modulus of said extruded composite and increasing the tensile strength of said extruded composite comprising the step of:
 - (a) adding between approximately 0.1% to 10% by weight of a chlorinated resin, said resin chlorinated to between approximately 50-75%, said properties compared to a composite without any added chlorinated resin.
21. The process of claim 16 wherein said resin wherein said resin is chlorinated to between approximately 60-75%.
22. The process of claim 17 wherein said resin is chlorinated to between approximately 68-72%.
23. The process of claim 17 which further comprises the step of adding a lubricant.
24. The process of claim 23 wherein said lubricant is selected from the group consisting of metal soaps, hydrocarbon waxes, fatty acids, long-chain alcohols, fatty acid esters, fatty acid amides, silicones, fluorochemicals, acrylics, and mixtures thereof.
25. The process of claim 24 wherein said lubricant is a polyalkylene glycol fatty acid ester.
26. The process of claim 21 which further comprises the step of:
 - (a) adding a processing aid.
27. A polymer composite which comprises:
 - (a) a cellulose-based polymer filler;
 - (b) a coupling aid which comprises:

- (i) a chlorinated resin, said resin chlorinated to between approximately 30-75%;
 - (ii) an interfacial bonding agent, said agent comprising a hydrophilic component and a hydrophobic component; and
 - (c) a thermoplastic polymer.
28. The composite of claim 27 wherein said chlorinated resin is chlorinated to between approximately 50-75%.
 29. The composite of claim 28 wherein said chlorinated resin is chlorinated to between 68-72%.
 30. The composite of claim 29 wherein said interfacial bonding agent is selected from the group consisting of metal soaps, hydrocarbon waxes, fatty acids, long-chain alcohols, fatty acid esters, fatty acid amides, silicones, fluorochemicals, acrylics, and mixtures thereof.
 31. The composite of claim 30 wherein said interfacial bonding agent is selected from the group consisting of particularly esters of C₁₆ to C₂₄ fatty acids with polyalkylene glycols or polyoxyalkylene glycols.
 32. The composite of claim 31 wherein said interfacial bonding agent is nonionic.
 33. The composite of claim 32 wherein said interfacial bonding agent is the reaction product of a long chain fatty acid selected from the group consisting of stearic, oleic, palmitic, lauric, and tallow acids with a polyalkylene or polyoxyalkylene glycol to form a polyalkylene mono- or di- ester.
 34. The composite of claim 31 which further comprises a processing aid.
 35. The composite of claim 34 wherein said processing aid is talc.